



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,479	01/11/2001	Kari Peltonen	30-537	8773

23117 7590 07/28/2003

NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER

OCAMPO, MARIANNE S

ART UNIT

PAPER NUMBER

1723

14

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicant No.	Applicant(s)
	09/757,479	PELTONEN ET AL.
Examiner	Art Unit	
Marianne S. Ocampo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 May 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 24-32,34-37,40-50,52 and 53 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 24-32,34-37,40-50 and 52-53 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

4) Interview Summary (PTO-413) Paper No(s). _____.

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 24 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by McBride (US 1,841,414).

3. With regards to claim 24, McBride discloses an apparatus capable of mixing a fluid medium with a solids-liquid suspension comprising a mixer casing (5) having an inlet (8, right) attached by a flange (9) to an inlet piping (10) and an outlet (8, left) and defining a flow axis between the inlet and the outlet, a conduit (defined by pipes 2, 10 which is registered with the opening 7 of the mixer casing 5) for feeding the fluid medium provided in an inlet piping into the mixer casing (5) and a rotor (11, 12) freely rotatably mounted in the casing for free rotation about an axis of rotation which is transverse to the flow axis and the rotor (11, 12) having a center, a shaft mounted on bearings in the casing and blades (18) which leave the rotor center

open and the blades being situated as such to thereby allow flow of a solids-liquid suspension therethrough, as in figs. 1 – 3 and pages 1 - 2.

4. Concerning claim 37, McBride also discloses an apparatus capable of mixing a fluid medium with a solids-liquid suspension comprising a mixer casing (5) defining an interior space and having an inlet (8, right) for introduction of a mass flow of material which includes solids-liquid suspension into the interior space of the casing (5) and an outlet (8, left) for discharging a mixture of the fluid medium and the solids-liquid suspension from the interior space of the casing (5), a conduit (not shown, dye inlet) for feeding the fluid medium into contact with the solids-liquid suspension and a mixing rotor (11, 12) freely rotatably mounted in the casing for free rotation about an axis of rotation and the axis of rotation being transverse to an axis of flow leading from the inlet (8) to the outlet (8) wherein the mixing rotor (11, 12) including a center, a shaft mounted on bearings in the casing (5) and blades (18), the blades (18) leaving the rotor center open for solids-liquid suspension and a fluid to enter and being positioned for contact with the fluid medium and solids-liquid suspension introduced into the mixer casing (5) to thereby responsively cause the mixing rotor (11, 12) to rotate and mix the fluid medium with the solids-liquid suspension, as in figs. 1 – 3 and pages 1 – 2.

5. Claims 24 – 25, 27 – 28, 36 - 37 and 40 - 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Riper et al. (US 300,170).

6. With regards to claim 24, Van Riper et al. disclose an apparatus capable of mixing a fluid medium (soda water) with a solids-liquid suspension (syrup) comprising a mixer casing (J) having an inlet (N) attached by a flange (H) to an inlet piping (D) and an outlet (j) and defining a flow axis between the inlet and the outlet, a conduit (p, L, C, M/N) for feeding the fluid medium (soda water) provided in the inlet piping going into the mixer casing (J) and a rotor (defined by the mixing blades S) *freely rotatably mounted* (which broadly interpreted to mean that no motor or drive is being used to drive/rotate the blades S) in the casing (J) for free rotation about an axis of rotation which is transverse to the flow axis and the rotor having a center, a shaft (l) mounted on bearings in the casing and blades (S) which leave the rotor center open for solids-liquid suspension (syrup) and the fluid (soda water) to enter and mix, as in figs. 1 & 4 and pages 1 - 2.

7. Concerning claim 37, Van Riper et al. also disclose an apparatus capable of mixing a fluid medium with a solids-liquid suspension comprising a mixer casing (J) defining an interior space and having an inlet (N) for introduction of a mass flow of material (syrup) which includes solids-liquid suspension into the interior space of the casing (J) and an outlet (j) for discharging a mixture of the fluid medium and the solids-liquid suspension from the interior space of the casing (J), a conduit (L, C, R, M) for feeding the fluid medium into contact with the solids-liquid suspension and a mixing rotor freely rotatably mounted in the casing for free rotation about an axis of rotation and the axis of rotation being transverse to an axis of flow leading from the inlet to the outlet (j) wherein the mixing rotor including a center, a shaft (l) mounted on bearings in the casing (J) and blades (S), the blades (S) leaving the rotor center open and being positioned

for contact with the fluid medium and solids-liquid suspension introduced into the mixer casing (J) to thereby responsively cause the mixing rotor to rotate and mix the fluid medium with the solids-liquid suspension, as in figs. 1 & 4 and pages 1 – 2.

8. With respect to claim 25, Van Riper et al. further disclose the inlet being provided with at least one throttling member (valve f or m) which throttles the flow of the fluid (syrup or soda water) into the casing (J), as in figs. 1 and 4.

9. Regarding claim 27, Van Riper et al. disclose the throttling member comprising a valve (m or f) mounted in the vicinity of the inlet for causing the mass center of flow of fluid entering the casing to deviate from flow centered on the axis of rotation, as in figs. 1 and 4.

10. With regards to claim 28, Van Riper et al. disclose the valve comprising part of the casing, and is also attached or comprises part of the inlet flange/inlet piping of the casing (J), as in figs. 1 and 4.

11. Concerning claim 36, Van Riper et al. disclose the conduit (L) feed the fluid medium and a solids-liquid suspension into the casing (J) and the rotor including mixing blades (S) which are contacted by the fluid medium and the solids-liquid suspension introduced by the conduit (L) so that the rotation of the mixing rotor is effected, as in figs. 1 and 4.

12. With respect to claim 40, Van Riper et al. disclose the conduit (L, particularly that of M) feed the fluid medium (soda water) directly into the interior space of the mixer casing (J), as in figs. 1 and 4.

13. Regarding claim 41, Van Riper et al. also disclose the inlet includes inlet piping (L, M, N) for the mass flow of material and the conduit (C, L) introduces the fluid medium into the inlet piping, as in figs. 1 and 4.

14. With respect to claim 42, Van Riper et al. further disclose the inlet being provided with at least one throttling member (valve f or m) which throttles the mass flow of the material/fluid (syrup or soda water) into the casing (J), as in figs. 1 and 4.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 26, 29 – 32, 43 - 50 and 52 - 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Riper et al. in view of Schafhaus (US 431,624).

17. Regarding claims 26 and 43 - 46, Van Riper et al. fail to disclose the throttling member comprising a valve or at least one rib mounted in the vicinity of the inlet in the casing for causing the mass center of flow of fluid entering the casing to deviate from the flow centered on the axis of rotation (claims 26 and 43 - 44), wherein the valve comprises a part of the casing (claim 45) and the inlet includes inlet piping for mass flow of material and the valve is mounted in the vicinity of the inlet piping (claim 46). Schafhaus teach a similar mixing apparatus to that of Van Riper et al., which includes at least one throttling member (valve arm C¹ and another arm mounted on the inlet wall of C) comprising a valve or at least one rib (in the form of the valve arm C¹ and another arm mounted on (left side of) the inlet wall of C) mounted in the vicinity of the inlet in the casing (A, C, F) for causing the mass center of flow of fluid entering the casing (F) to deviate from the flow centered on the axis of rotation, as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the throttling member of Van Riper et al., by adding the embodiment taught by Schafhaus in order to provide additional means for distributing and slowing down the flow of fluid into the mixer casing, thereby allowing gradual mixing of the fluid and the solids-liquid suspension prior to being acted by the mixing blades for a more uniform mixture.

18. Regarding claims 29 and 47, Schafhaus further teaches having at least one stationary mixing member (B, E and f) disposed within the casing (A, C, F), as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus for mixing of Van Riper et al., by adding the embodiment taught by Schafhaus in order to provide additional means for mixing which also provides deflection towards the mixing rotors (F¹, F²) for a more effective and reliable mixing of ingredients/fluid and solids-liquid suspension and prevent sticking of some of the mixture on walls of the casing (page 1 of Schafhaus).

19. With regards to claims 30 and 48, Schafhaus further teaches the at least one stationary mixing member (B, E and f) mounted at least 90 degrees from the outlet opposite a direction of the rotation of the rotor, as in fig. 2.

20. Concerning claims 31 and 49, Schafhaus also teaches the at least one stationary mixing member (B, E and f) comprising a rib attached to a wall of the casing (A, F), as in fig. 2.

21. With respect to claims 32 and 50, Schafhaus further teaches an outlet of the mixing casing (C, A, F) including an outlet pipe which recovers dynamic pressure from the flow of mixed suspension, as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus for mixing of Van Riper et al., by adding the embodiment taught by Schafhaus in order to provide an outlet means which provides an effective

and faster discharging of the mixture/mixed suspension from the mixing apparatus/casing (C, A, F).

22. Regarding claims 34 and 52, Schafhaus also teaches the inlet (formed by casing portion C) and the outlet (at the end of casing portion F) being disposed with respect to each other so that the direction of flow of fluid changes at most about 100 degrees from the inlet to the outlet, as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus for mixing of Van Riper et al., by adding the embodiment taught by Schafhaus in order to provide a more thorough and reliable mixing of the fluid and solids-liquid suspension. (see page 1 of Schafhaus, lines 100 – 102).

23. Concerning claims 35 and 53, Schafhaus further teaches the outlet being tangential to the direction of the rotation of the rotor, as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus for mixing of Van Riper et al., by adding the embodiment taught by Schafhaus in order to provide not only a means for quick discharge of the mixed suspension (fluid and solids-liquid suspension) but allow more time for mixing of the fluid and the solids-liquid suspension while in the casing (F).

Response to Amendments and Arguments

24. Applicants' arguments and amendments filed on 5-13-03 (Paper no. 12) with respect to claims 24 – 32, 34 – 37, 40 – 50 and 52 - 53 have been considered but are deemed unpersuasive. First of all, applicants argue that due to the presence of a fine mesh iron screen (23) forming the dye cage within the rotor of the prior art (McBride, US 1,841,414) apparatus, that the screen in the rotor's center does not make the rotor open for flow of solids-liquid suspension therethrough. The examiner has to disagree. A lot of emphasis is being given by the applicants to the disclosure in McBride, particularly in page 2, lines 10 – 12, which states "which screen (23) permits of the passage to a limited extent of the liquid fuel into the dye cage or container" and based on this disclosure, the applicants have concluded that the rotor of McBride does not allow the flow of solids-liquid suspension therethrough (see arguments in pages 8 – 9 of Paper no. 12). Eventhough a flow is being restricted by the iron screen (23) within the rotor of McBride, the examiner considered that a flow of solids-liquid suspension could still be flowed through the rotor and its center with the presence of the iron screen of the apparatus of McBride, and the type of solids-liquid suspension that can flow therethrough would depend upon the size of particulates/solids in the suspension. In other words, it may be a slow flow through the rotor's center and a type of suspension where the solids in the solids-liquid suspension has a size which can go through the interstices/holes of the iron screen. The iron screen in McBride has been used to restrict or slow down the flow of fuel through the cage for a more even and uniform mixing of the fuel with the dye in the cage. The claim language of the base claims 24 and 37 is open for any additional structures such as an iron screen within the rotor (in other words, the claim uses "comprising" as a transitional phrase which is open to additional structures not positively

recited), and states that “*blades which leave the rotor open and thereby allow for flow of the solids-liquid suspension therethrough*”. The examiner believes the apparatus of McBride still meets the language of the current version of claims 24 and 37. The blades on the apparatus of McBride are situated such that the rotor has a portion of its center open for fluid flow, which is the area within the rotor just passed the blades and adjacent the outside circumference of the screen, and this area allows the fluid flow (in which fluid could be any solids-liquid suspension) and still even with a screen in the rotor’s center, a suspension such as a solids-liquid suspension is still possible to flow therethrough depending on the size of the solids in the suspension.

25. Regarding the arguments made about McBride and the second prior art (Van Riper et al., US 300,170), specifically in page 9, paragraphs 3 – 5 and page 10, paragraphs 1 - 3, these arguments are not persuasive. With respect to the argument that McBride’s apparatus lacks the conduit for feeding a fluid medium (which in this instance, the examiner has considered the fuel as the fluid medium), as in pages 9 –10, which is being provided in one of the inlet piping or mixer casing, the examiner disagrees. A conduit does exist in McBride (see rejection of claims 24 and 37 in paragraphs 3 – 4 above) defined by the pipes 10 and 2 which is registered with the opening (7) of the mixer casing (5) which is capable of feeding a fluid medium (such as the fuel in this instance) provided in the inlet piping or the mixer casing. Applicants argue that Van Riper et al. fail to teach the claimed invention because *the invention effects the rotation of the rotor by subjecting directly the mixer blades to the flow of solids-liquid suspension* and not by making the blades (of Van Riper) rotate some other way (see paragraph 3 of page 9). There is no

limitations in either claims 24 or 37 which requires the blades to be directly subjected only to the flow of the solids-liquid suspension which causes the rotor to rotate. What is being claimed in claim 37 is that the *blades are positioned for contact for both the fluid medium and solids-liquid suspension introduced into the mixer casing to thereby responsively cause the rotor to rotate and mix the fluid medium with the solids-liquid suspension.* Van Riper et al. do teach the blades being positioned for contact with both the fluid medium (soda water coming out of arms R) and solids-liquid suspension (syrup coming out of N) which are being introduced in the mixer casing (J) once the contact of the fluid medium has been made through arms R, the blades (S) are effectively moved (i.e. responsively causing) to rotate and mix the fluid medium with the solids-liquid suspension. Concerning the argument that Van Riper et al. do not have the conduit provided in one of the inlet piping and the mixer casing for feeding the fluid medium into the casing or the inlet piping (see paragraph 1 of page 10 of Paper 12), as in the amended/current version of claim 24, this is not true. Van Riper et al. teach or disclose such a conduit (p) for feeding the fluid medium into the mixer casing (J) which is provided as part of the inlet piping (L), as in fig. 1 of Van Riper et al. With regards to the arguments regarding the combination of Schafhaus and Van Riper et al., it is unclear what features the applicants believe is not being met to come to the conclusion that the combination does not met the claimed invention as they are now presented in the claims.

26. In summary, applicants' arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without

specifically pointing out how the language of the claims patentably distinguishes them from the references. Furthermore, applicants' arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Conclusion

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-

1039. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

30. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

WLO
M.S.O.
July 24, 2003

W. L. Walker
W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700